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Spatial parameters of Late Iron Age settlements in the upper Thukela Valley

by

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ABSTRACT

This paper describes a survey of stone-built settlements in the interior grasslands of Natal. These are examined at the levels of homestead, cluster and settlement within the landscape. Comparisons and contrasts are drawn with the ethnology of Nguni-speaking peoples in the region.

INTRODUCTION

Current Iron Age research in southern Africa is focusing on built settlement patterns to a greater extent than ever before. Much of the recent emphasis has been on attempts to establish very widespread similarities among past and present Bantu-speaking peoples in southern Africa, based in the first instance on the ethnography (eg. Kuper 1980 1982, Huffman 1982 1984). There have also been attempts to interpret the archaeological record in terms of these generalised patterns (eg. Evers 1984, Taylor 1984).

Research at the Natal Museum has taken a different course from that concerned with sub-continental patterns. Here the emphasis has been on getting to understand local settlement patterns in greater detail. One reason for this has been the realisation that previous descriptions, particularly those in the ethnographic literature, have seldom been based on surveys, but rather on impressionistic generalisations or at best selective fieldwork on small samples of homesteads. This does not imply criticism, since the studies concerned were not aimed primarily at the built settlement pattern but at other social aspects such as religion (Berglund 1976), socio-political structure (Holleman 1940), kinship (Preston-Whyte & Sibisi 1975) and social avoidance (Raum 1973). What we do need to realise, however, is that such anthropological work is often unsuitable as the basis for interpreting historical let alone prehistoric settlement patterns. What we need is surveyed samples that are both appropriate and adequate. It was indeed partly for this reason that the Natal Museum has established its Department of Ethnoarchaeology. Among other things this department aims to look into diachronic settlement changes at least as far back as the limits of written and oral records. This work and the Late Iron Age research reported in this paper are therefore designed to complement each other.

This project is a co-operative venture between the Departments of Archaeology and Ethnoarchaeology at the Natal Museum and the Spatial Archaeological Research Unit of the University of Cape Town. Initial work included the taking of low-level air photographs and the production from them of computer-drawn maps of the visible structures.

The settlement sample on which the present paper is based, falls within an area of 13 square kilometres, mainly on the farm Kiaora, five kilometres east of Bergville on the Thukela River. The area was chosen because it includes the published site of Mgoduyanuka (Maggs 1982), the only site of its type yet examined in detail. This has allowed us to place the current research within a chronological, economic and typological framework.

The Mgoduyanuka occupation predates the Mfecane (1820) and is thought to be essentially of the seventeenth and eighteenth centuries, though it may extend back a little earlier. The economy was based on maize and cattle with sheep/goats in addition (Plug & Brown 1982). The available oral history though limited in detail, indicates that the inhabitants were an Nguni-speaking group, the Zizi of whom descendants can still be traced in the district (Maggs 1982).

Because we know something of the chronology and the identity of the community who built the settlements we are able to make fairly close comparisons with local ethnography. The Zizi are today subsumed within the broader classification *Zulu*. In this paper we have therefore limited comparisons essentially to those drawn from the Zulu ethnography.

Our present aim is to examine patterns at three levels of scale:

1. The basic settlement unit or homestead.
2. The arrangement of settlement units into clusters.
3. The location of settlement within the natural landscape.

STRUCTURES AND FEATURES

During fieldwork the computer-generated maps were checked and, where necessary, corrected. Two teams of approximately nine people each searched the area of each map for additional features not visible from the air photographs. In practice the only features that could be plotted in advance were the stone or earth-and-stone livestock enclosures. The smaller features were surveyed and plotted on the maps and a questionnaire was used to record dimensions and other characteristics of each structure or feature.

The structure and features were classified as follows:

1. Primary enclosure—circular to oval enclosure.
2. Secondary enclosure—formed by a wall abutting on to a primary enclosure.
3. Paving—usually considered to be a hut floor.
4. Stone pile.
5. Pile/paving—uncertainty as to 3 or 4 above.
6. Lower grindstone.
7. Midden.
8. Remnant of earlier walling.

The survey confirmed the conclusion, drawn from the previous work (Maggs 1982) and examination of air photographs, that the basic settlement unit consists of a primary enclosure, with or without secondary walling, surrounded loosely by a number of the smaller features (Fig. 1). However, this pattern has often been disturbed or destroyed by the proximity of other units in the tighter clusters, as well as post-occupation activities such as robbing and cultivation.

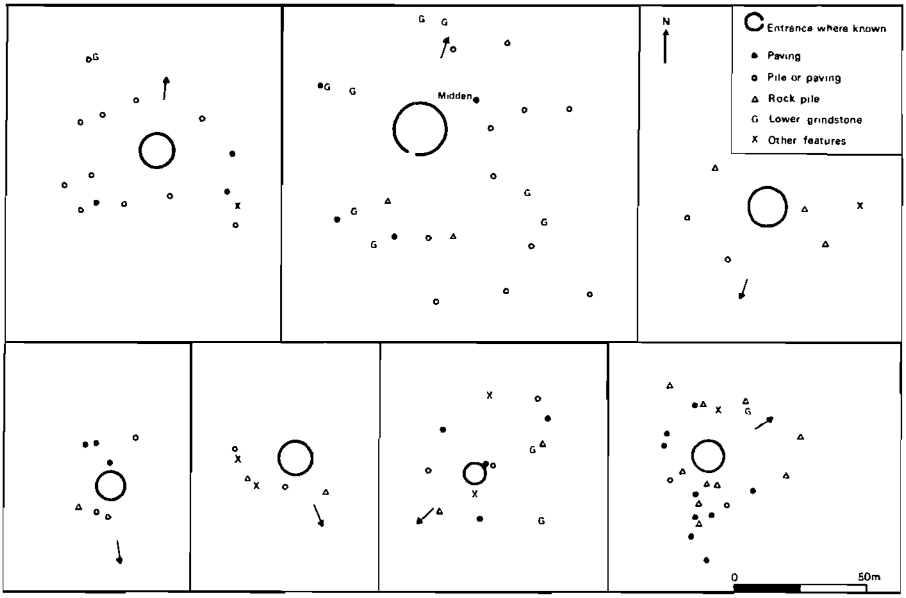

Fig. 1. Settlement is based on homestead units with a central stock-pen surrounded loosely by huts and other smaller features. Arrows denote downhill direction; entrances are indicated where they are preserved.

Some comments should be made here on the smaller features before their arrangement in space is discussed.

Paving. Some house floors on the Iron Age sites in this area were paved with flattish stones (Maggs 1982). This practice can still be seen in currently occupied, local homesteads where the paving is designed to keep moisture from the overlying earth floor. However, not all floors were treated this way, neither in Iron Age times nor today. Furthermore, many of the earlier floors are undoubtedly covered by soil and therefore not visible without extensive excavation. Therefore on most settlement units our survey will have failed to identify the position of some or any of the houses.

In one case the earth floor of a house has survived because it was hardened by burning. Although the edges were not clear the central, bowl-shaped hearth with raised rim was preserved (Fig. 2). This was associated with three spherical fire-stones showing heat spalling. The form is congruent with ethnographic descriptions of Zulu hearths. There was no trace of paving under this floor although there were

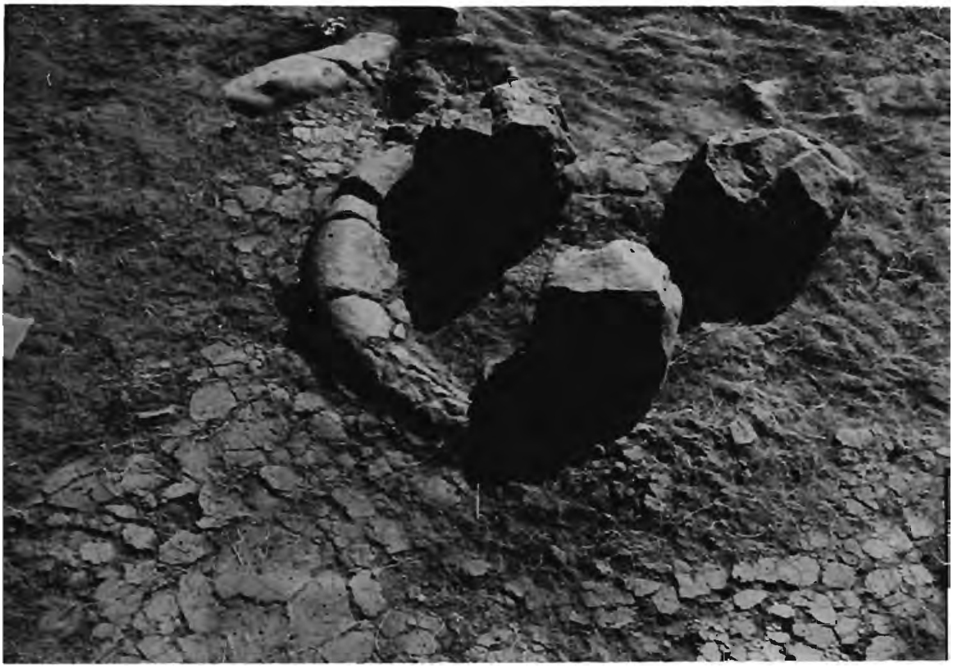

Fig. 2. Excavated hut floor of earth with bowl-shaped hearth and three fire-stones. Note the absence of paving.

two paved floors within this settlement unit, showing that both types of floor may be found within the same homestead.

Stone pile. These features show considerable variation in size and construction as well as in location. It is therefore probable that they were built for several reasons, among them being stands for grain storage, stands for piles of dung fuel, graves and to clear the land for cultivation. In some well-preserved instances, small piles were situated close to paved floors on the side away from the stock enclosure (Maggs 1982). This arrangement is strongly suggestive of a grain storage facility in terms of local historic settlement pattern. Furthermore local memory, and even contemporary practice in a few instances, places large grain baskets (*izilulu*) on small stone platforms behind houses (research by one of us—D. O.). Thus some piles almost certainly indicate the position of grain stores. However, in practice we were unable to establish criteria to distinguish these from other piles.

Graves, according to the ethnography, would most likely be within or just above the stock-pen. Very few stone piles occupied such positions and one that was excavated proved not to be a grave (see also Hall & Maggs 1979). We are therefore unable at present to identify any piles as graves, nor indeed can we be sure that there were graves on this group of settlements.

Irregular piles of stones to clear land for cultivation have been reported on related sites in Zululand (Hall & Maggs 1979). A similar practice seems to have occurred in the present sample area, for example towards the lower left corner of Fig. 12 there is an area with about 20 piles unrelated to any other structure. Piles and pile/pavings are also particularly common in the south-western corner of the sample where farm labourers had ploughed fields during this century. It seems that this practice both in the Iron Age and recent times was quite widespread and that over much of the sample it has masked parts of the original settlement pattern.

Pile/paving. In many cases preservation is not sufficient to distinguish these two categories. This is particularly the case in areas where there are few flat stones that could be selected for paving. Post-occupational factors have also played a part, for example termites are attracted to stone features as sites for termitaria.

Lower grindstones. The typical grindstones are large and deeply worn. The stone has often been brought from some distance and is usually a hard sandstone. With the exception of those incorporated into walls, they were plotted on the assumption that they may indicate an area where grinding was carried out. Quite a few were found on or immediately beside paving. However, ethnoarchaeological fieldwork by one of us (D. O.) has shown that grindstones may be stored apart from working areas.

Midden. Very few middens were found within the sample area, so that it has not been possible to determine discard patterns. The lack of evidence would, however, suggest a radial pattern which dispersed waste material outwards around the perimeter of the homestead as in the traditional Zulu pattern (Mack & Oswald in press). However, nothing equivalent to the ash heap at the Zulu homestead entrance was seen in the sample. Patterns of discard clearly are of major significance to archaeology but as yet they have been given little consideration in Iron Age studies south of the equator.

Remnant of earlier walling. Wall robbing is a regular feature of these as of other stone-built settlements. Where such structures are still clearly visible they have been indicated as dotted lines on the maps. Their frequency gives us some idea of the sequence of occupation in each cluster but it also causes 'background noise' which can not always be filtered out and thus produces a confused pattern. An example of this is the central part of Fig. 12. Where there are such features we also have to be aware of the possibility that some of the smaller features may belong to an earlier phase of the cluster's occupation rather than the final phase with its unrobbed walls.

THE SETTLEMENT UNIT

The stock-pens. The unit is best defined by those examples which are sufficiently separated from their neighbours that their components are not confused. They should also show no signs of earlier walling nor subsequent cultivation. Such examples are shown in Fig. 1 where it is apparent that the smaller features are scattered around the central stock-pen without a very clearly defined pattern. The majority of settlement units are centred on a simple primary enclosure as shown in Fig. 1.

Primary enclosures range in diameter from 3 to 25 m but, with a mean of 11,5 m and a standard deviation of 4 m, most fall within a small size range which gives the settlements a degree of uniformity. Variation within this central component of the homestead is provided not so much by size but by the addition of secondary

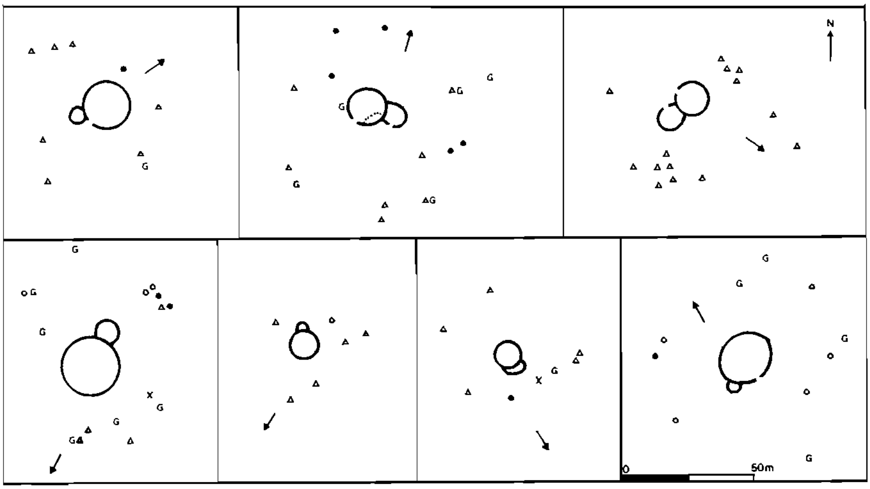

Fig. 3. Settlement units with secondary walling to provide additional stock-pens.

walling. This can be attached to the inside of a primary enclosure but in the great majority of cases abuts against the outside of the enclosure.

Secondary walling seems to have had two distinct objectives. In most cases it provided an additional enclosure suitable to hold more livestock or perhaps stock of a different type or age group from the main herd. These enclosures are always smaller than the primary to which they are attached and they have separate entrances (Fig. 3), in those cases where the entrance is still visible. The other and much rarer function of secondary walling was to provide long, narrow entrance passages. In most cases these are concentric to the primary, which would have forced the animals to walk part way around the perimeter before entering (Fig. 4; Fig. 5). In one case there are two secondary walls forming a serpentine passage (Fig. 4 top left; Maggs 1982). In another case, although the 'passage' is little more than a metre wide, the only well-preserved entrance to the primary leads directly outside (Fig. 4 top centre). However, since the wall is heavily disturbed by vegetation the possibility of additional entrances cannot be excluded.

The practical effect of such passages would have been to slow down the movement of livestock. It is by no means clear, however, that the function was a practical one. We are not aware of any symbolic importance attached to passages in the ethnography of Nguni-speaking societies but this may have been the case as it was in some other areas of southern Africa.

Although there are no particularly large primary enclosures much the same effect has been achieved on several units where more than one such enclosure has been built in the centre of the settlement unit. In these cases the primary enclosures are always built in a row along the contour; the rows may include two to nine enclosures (Fig. 6). That the enclosures are contemporary can be determined by the fact that their walls are in a similar state of preservation—none has been robbed to build its neighbour. It is possible that this linear arrangement was a relatively late development, but in all other respects such homesteads remain a part

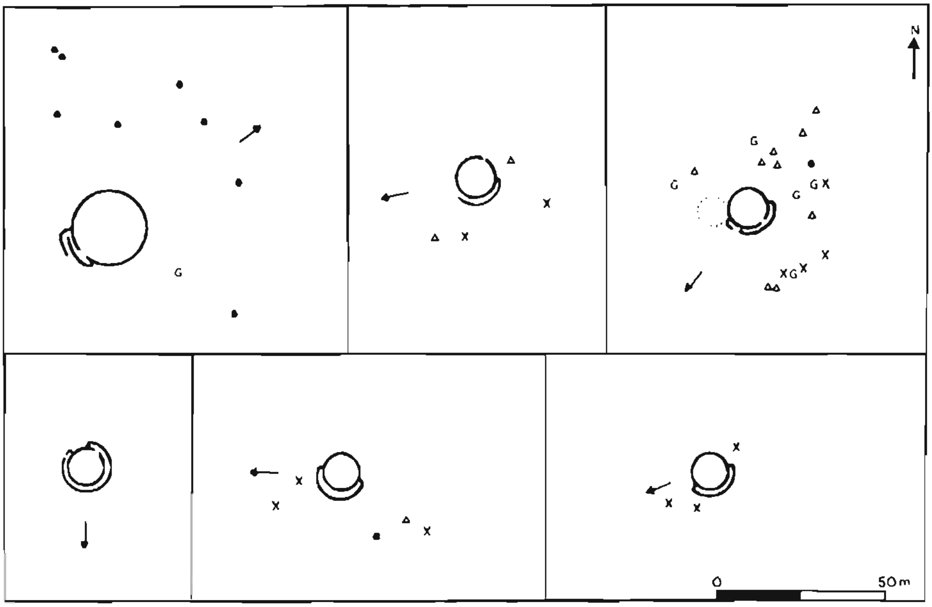

Fig. 4. Settlement units where secondary walling has produced entrance passages to the stock-pens.

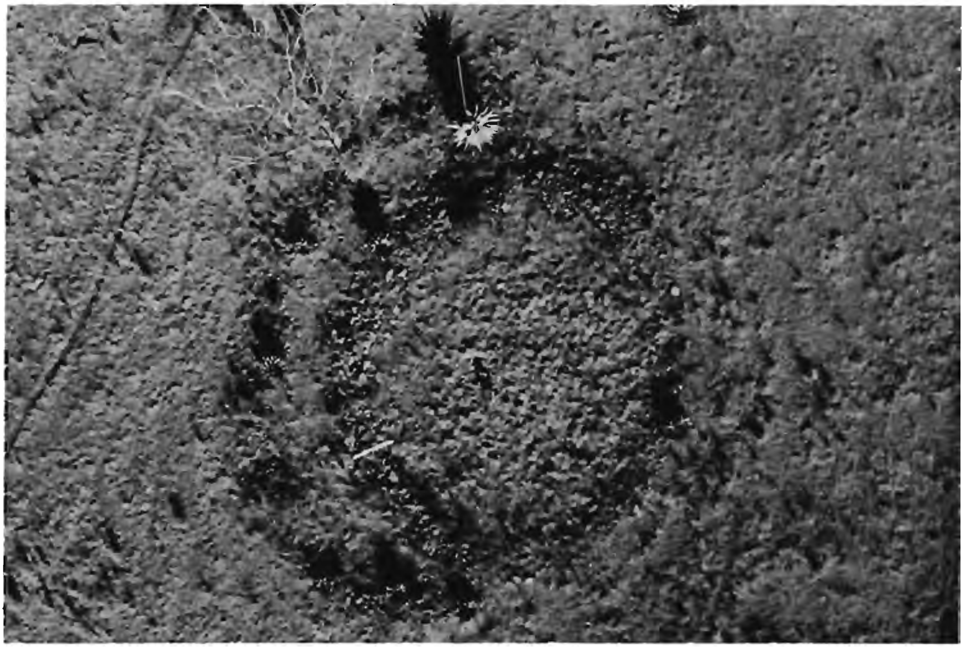

Fig. 5. Low-level air photograph, taken from hydrogen balloon, showing stock-pen with entrance passage formed by secondary walling. The two white lines are paper strips marking the entrances (Photo D. Noli).

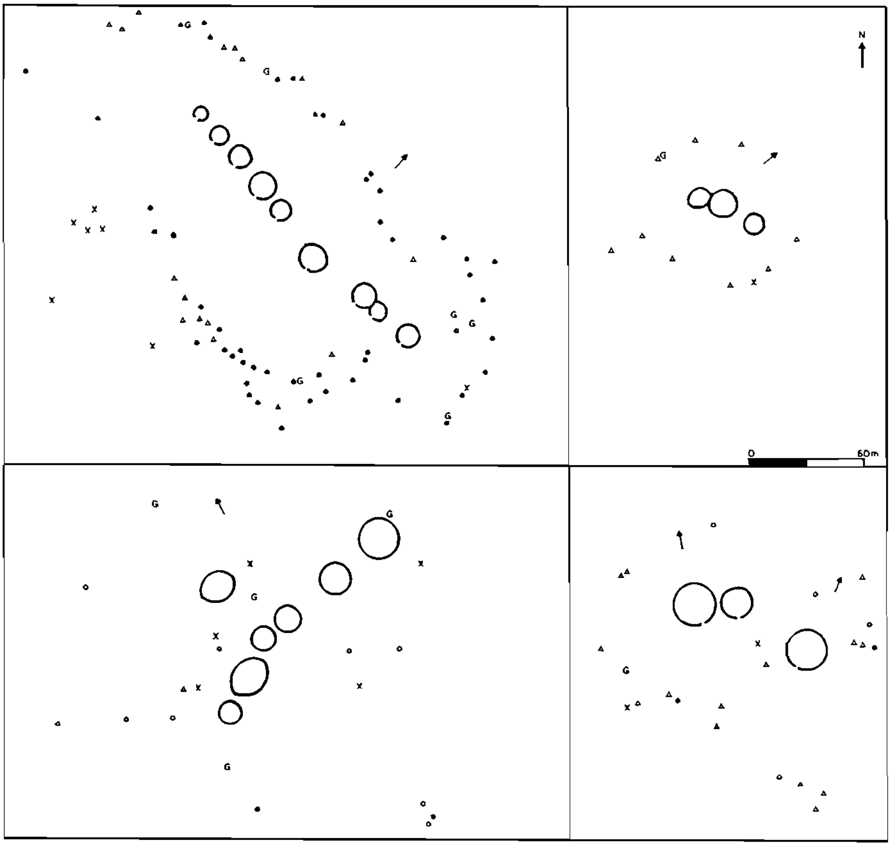

Fig. 6. Settlement units with several primary enclosures built in a row. This variation on the basic homestead unit presents the greatest size and complexity achieved within the area.

of the cultural pattern of the other units. We have not been able to find a contemporary explanation for this pattern, however, it seems probable that some form of extended residential unit is reflected.

Orientation. Considerable interest has recently been shown in the orientation of Iron Age and historical homesteads (Kuper 1980 1982, Evers 1984). This parameter was therefore examined in some detail in the present project.

The orientation of homesteads in Nguni-speaking societies is expressed by several features, some of which are unlikely to be visible on archaeological sites. Those which are both significant and likely to be archaeologically visible are the following:

1. Orientation of central stock-pen entrance.
2. Position of *indlunkulu* (great hut) *vis-à-vis* stock-pen.
3. Concentration of huts *vis-à-vis* stock-pen.

These features may be orientated in relation to two factors, slope of the land and cardinal direction.

Earlier fieldwork has shown that there is a general tendency for the pre-nineteenth-century stock-pens in the interior grasslands of Natal to open uphill (Hall & Maggs 1979, Maggs 1982). Despite the fact that in the present sample most walls were too poorly preserved for their entrances to be plotted, sufficient have survived to establish that there is a very strong correlation between direction of slope and direction of entrance (Fig. 7). Out of 38 examples the three exceptions which were recorded in the field as opening downhill were all on very gentle slopes of 1 or 2 degrees. It can thus be said that the builders strongly held to a convention that stock-pens should open uphill. This is the opposite to the convention among historical and contemporary Zulu (eg. Mack & Oswald in press) but similar to that among related peoples further south such as the Mpondo and Bomvana (Kuper 1980).

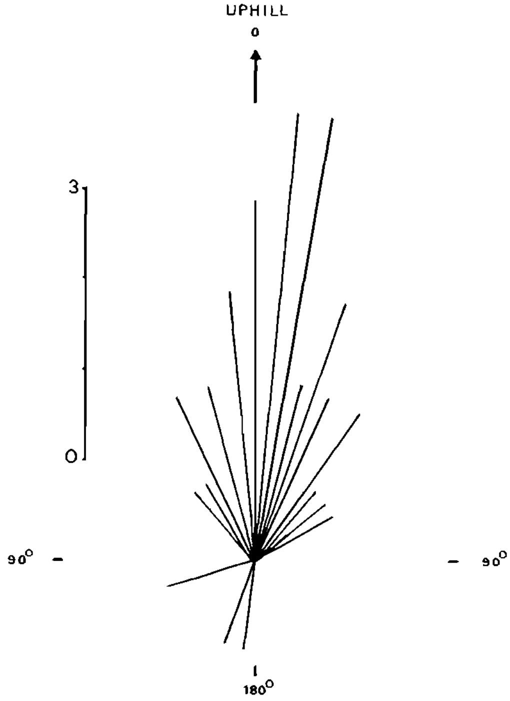

Fig. 7. Orientation of stock-pen entrance in relation to slope of ground. Note the very marked uphill orientation. The three exceptions to this are on ground with a barely perceptible slope.

By contrast with the clear pattern of entrance orientation in relation to topography there is no obvious correlation with cardinal direction (Fig. 8). This is an important point since some authors have claimed that Zulu homesteads have a preferred eastern orientation (Krige 1936, Kuper 1980). Recent research by Mack & Oswald (in press), looking at both the literature and new field evidence, has however shown that there is no support for the claim of an eastern preference,

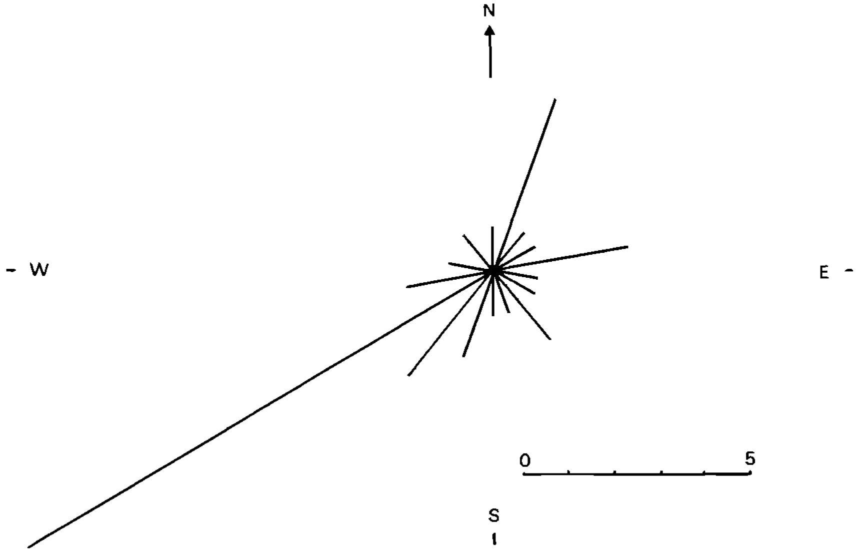

Fig. 8. Orientation of stock-pen entrances in relation to cardinal points. Note the lack of any clear preference. The long south-westerly axis comprises 12 entrances, nine of which are from the same homestead.

although the correlation with slope is strong. The present sample supports this viewpoint and shows that the direction of slope but not the cardinal direction has influenced homestead orientation in this region for at least three of four centuries.

Turning now to the second and third features that could be expected to show homestead orientation we must at the outset admit that the poor preservation or visibility of hut floors in the sample requires that any conclusions be regarded with some caution. Indeed it was quite impracticable in the field to identify any of the floors as that of an *indlunkulu* (great hut).

On the other hand we consider that if there had been a pronounced tendency to build huts in a particular direction in relation to the stock-pen, this should emerge from the survey. We can think of no reason, for example, why huts built above or to one side of the pens should be differentially preserved from those built below or on the other side.

Each homestead was therefore divided into four quadrants, centred on the centre of each stock-pen. The number of 'pavings' falling within each quadrant was counted, the results being shown in Fig. 9a. There is a relatively even all-round distribution of paved floors and certainly no concentration in the uphill quadrant. The results can be roughly compared with the figures from a contemporary sample in Zululand, although these homesteads were divided up in a slightly different way and granaries were included along with the huts (Fig. 9b; Mack & Oswald in press and pers. comm.). Here there is a very marked concentration of huts in the upper section and very few in the lower. The difference would suggest that the social factors known to be controlling positions of huts in the Zululand sample were not identical to those at work in the Thukela sample.

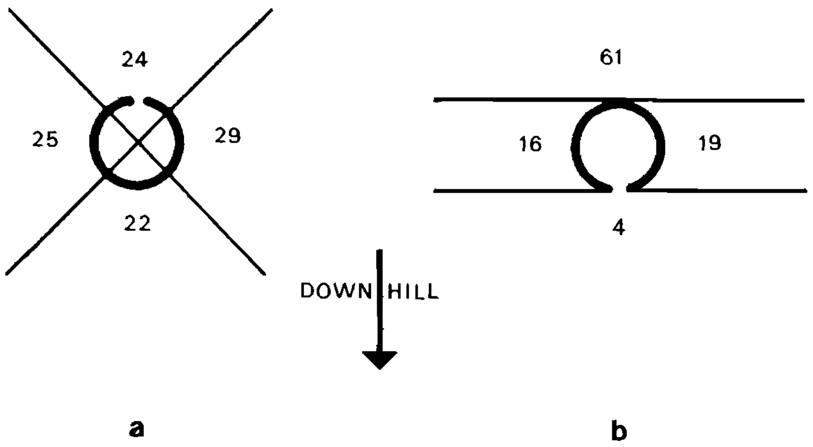

Fig. 9. a. Percentage of paved floors in the four sectors of the homesteads, for comparison with b. a contemporary Zulu sample of homesteads divided up somewhat differently (Mack pers. comm.). The Thukela sample lacks a concentration in the uphill sector.

CLUSTERING

There are a number of aspects of settlement at the cluster level that we are interested in exploring. These include concentration/dispersal, clustering according to descent group, diachronic change resulting from the segmentation of descent groups and signs of hierarchical patterning. However, further work over a larger research area will be needed to elucidate some of the patterning at this level of scale.

Concentration/dispersal. The map of the whole research area (Fig. 10) shows that there was fairly dense occupation of the area as a whole. There were strong concentrations in discrete settlements towards the north, while towards the southwest a much more dispersed and lower density pattern is evident. The four larger-scale maps (Figs 11 to 14), whose relative positions are marked on Fig. 10, show this patterning more clearly. There are some very concentrated areas of building within the larger, northern settlements, which contrast markedly with the dispersed and weakly clustered pattern of Fig. 14. Environmental factors that may have influenced this pattern will be discussed later. In terms of social factors it seems that concentration was preferred by most families but it was by no means mandatory within the social framework.

In order to obtain a numerical expression for the degree of concentration, we have taken nearest-neighbour measurements from the centre of each primary enclosure in the section of the sample area covered by Figs 11 to 14. In this analysis we have ignored robbed walling, as representing earlier phases of occuption, and we have considered the homesteads with a row of primary enclosures as single units.

The results (Fig. 15c) show that the great majority of homesteads are less than 100 m from their nearest neighbour. Since the measurements are from the centres of the homesteads, not from their peripheries which can seldom be determined accurately, the majority of homesteads are in effect touching at least one

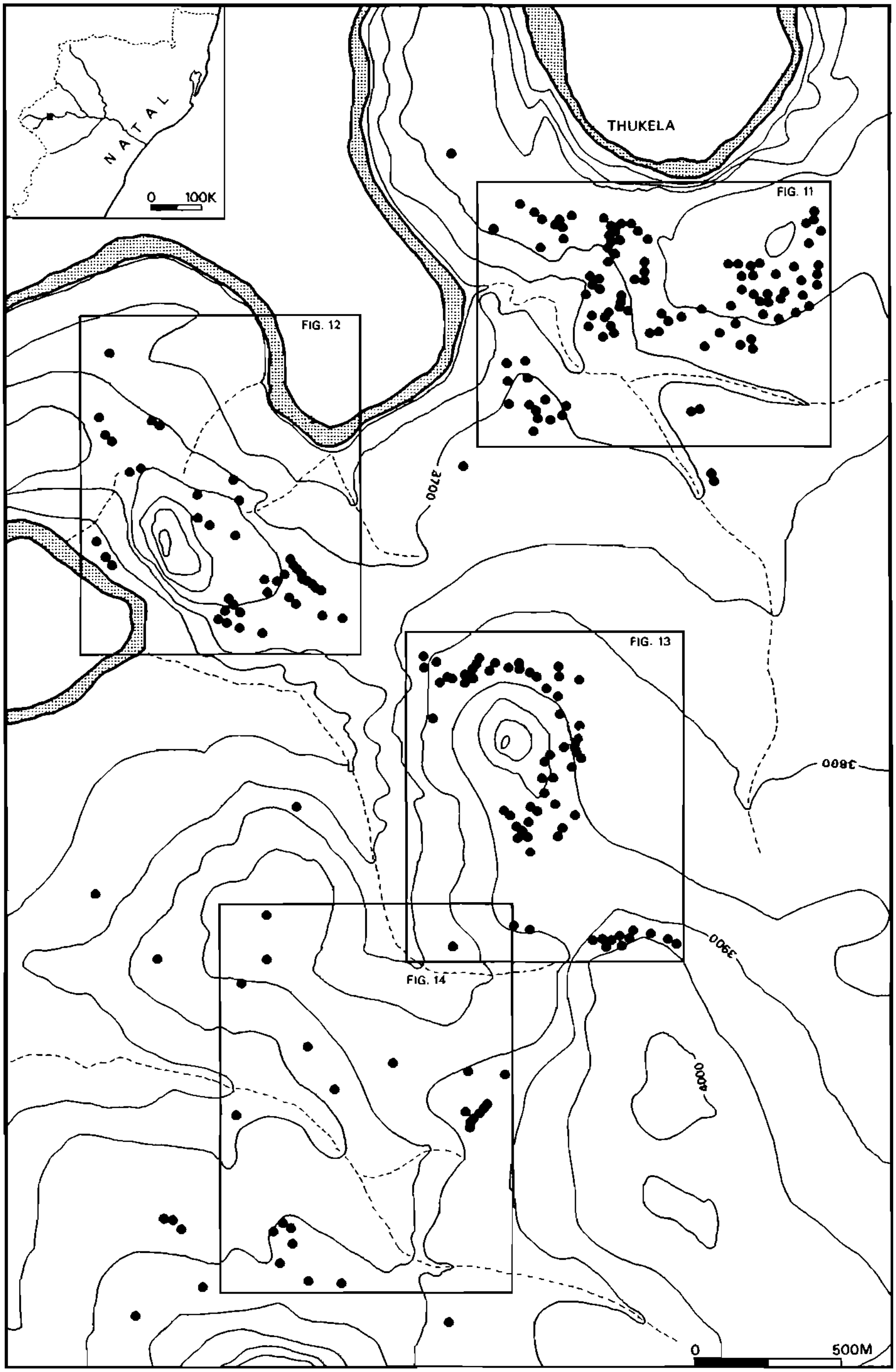

Fig. 10. Settlement distribution in the research area as a whole showing larger concentrations towards the north, dispersed pattern to the southwest. The locations of Figs 11 to 14 are indicated. Contour height in feet.

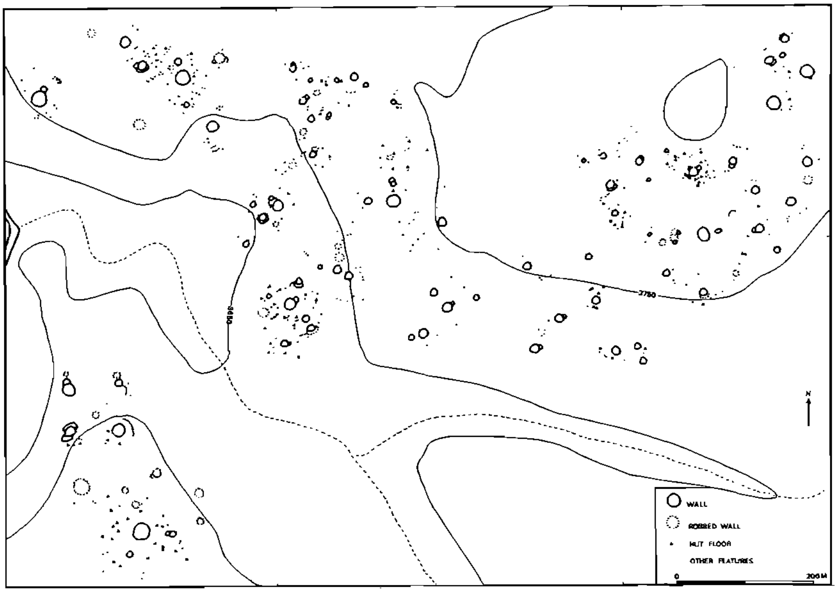

Fig. 11. This section of the sample contains the largest semi-continuous settlement. Key refers to Figs 11–14.

neighbour. This is confirmed by the distribution of smaller features (as shown on Figs 11 to 13) which in many cases cannot clearly be seen as relating to one particular primary enclosure rather than another.

Among the four sections of the research area contributing to this histogram (Fig. 15c), the varying degrees of concentration noted above as being apparent from the maps show up very clearly in terms of the nearest-neighbour distances. Among the four sections concerned, the two extremes of concentration and dispersion are represented by the most clustered, north-eastern section with its tight distribution (Fig. 15a) and the south-western section with its wide range of nearest-neighbour measurements (Fig. 15b). From the latter it is apparent that the strong skew to the right in the combined histogram (Fig. 15c) is almost entirely contributed by the latter section with its low density, dispersed pattern.

Settlements of Nguni-speaking peoples have been categorised as being of separate family homesteads, often quite isolated from others (Shaw & Van Warmelo 1971:99, Bryant 1949:74). Gluckman (quoted in Sansom 1974) says of pre-colonial Zululand that:

> 'A demographic survey would show the homesteads scattered at some distance apart (a few hundred yards to a mile or two). . . .'

Similar statements are common in the Nguni ethnography—the dispersed pattern sometimes being contrasted with the more concentrated settlements of Sotho-Tswana peoples. From this dichotomy Sansom (1974) has developed the thesis that concentration or dispersal is the result of ecological factors:

> 'The Bantu East is characterised by dispersed settlement of its inhabitants, whose homes dot the landscape. Residentially scattered, the Easterners confine their subsistence activities to small and exclusive areas near their homes. Western people concentrate their dwellings and disperse their economic

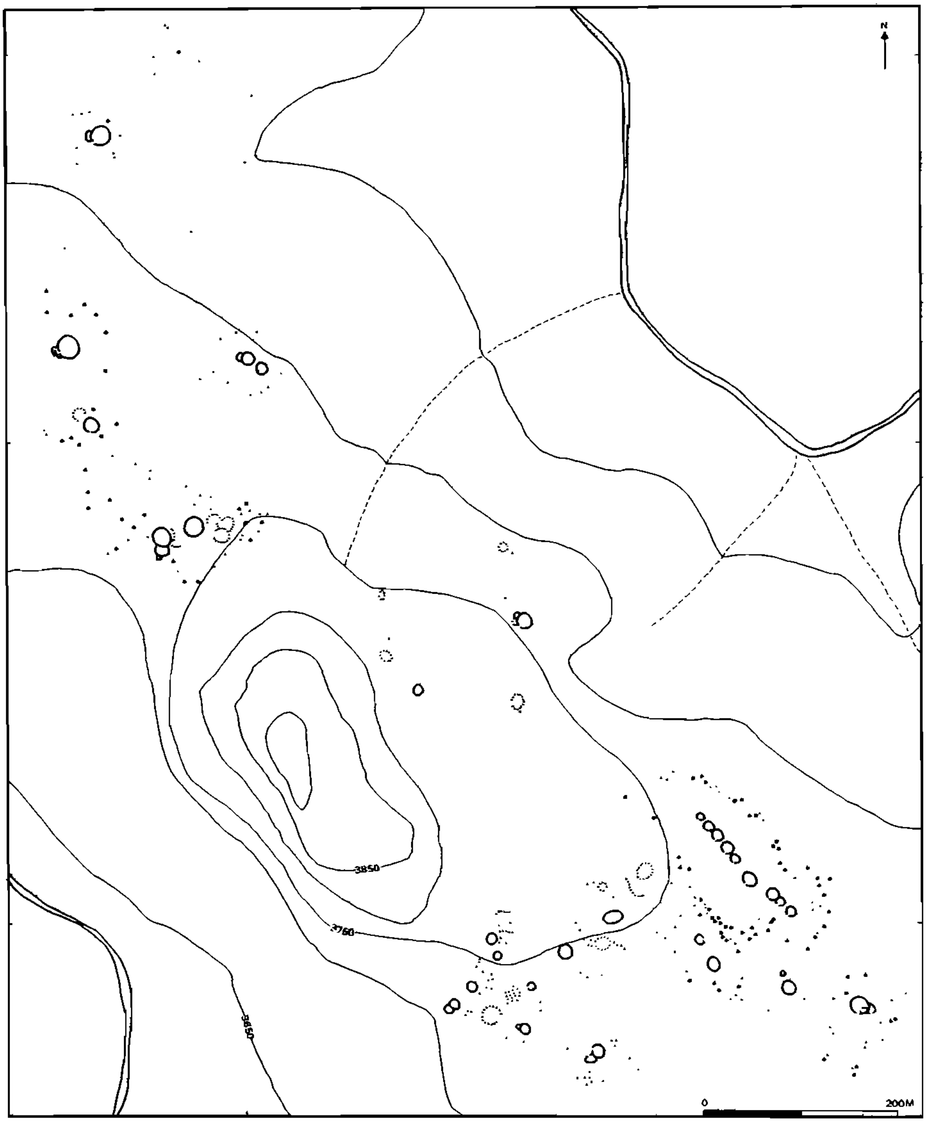

Fig. 12. Settlement around the foot of Mgoduyanuka hill (Maggs 1982) includes some interesting variations on the homestead theme.

activities over a wide zone of exploitation. These contrasts are associated with trends in the regulation of access to resources.' (*op. cit.* 139)

We will be looking at some of the environmental factors that may have influenced settlement, in the next section. At this stage we merely wish to underline the point that the three northern sections of the Thukela sample clearly do not fit into the generally perceived, dispersed settlement pattern, yet it is associated with an Nguni-speaking people—the Zizi. What is more, the south-western section does

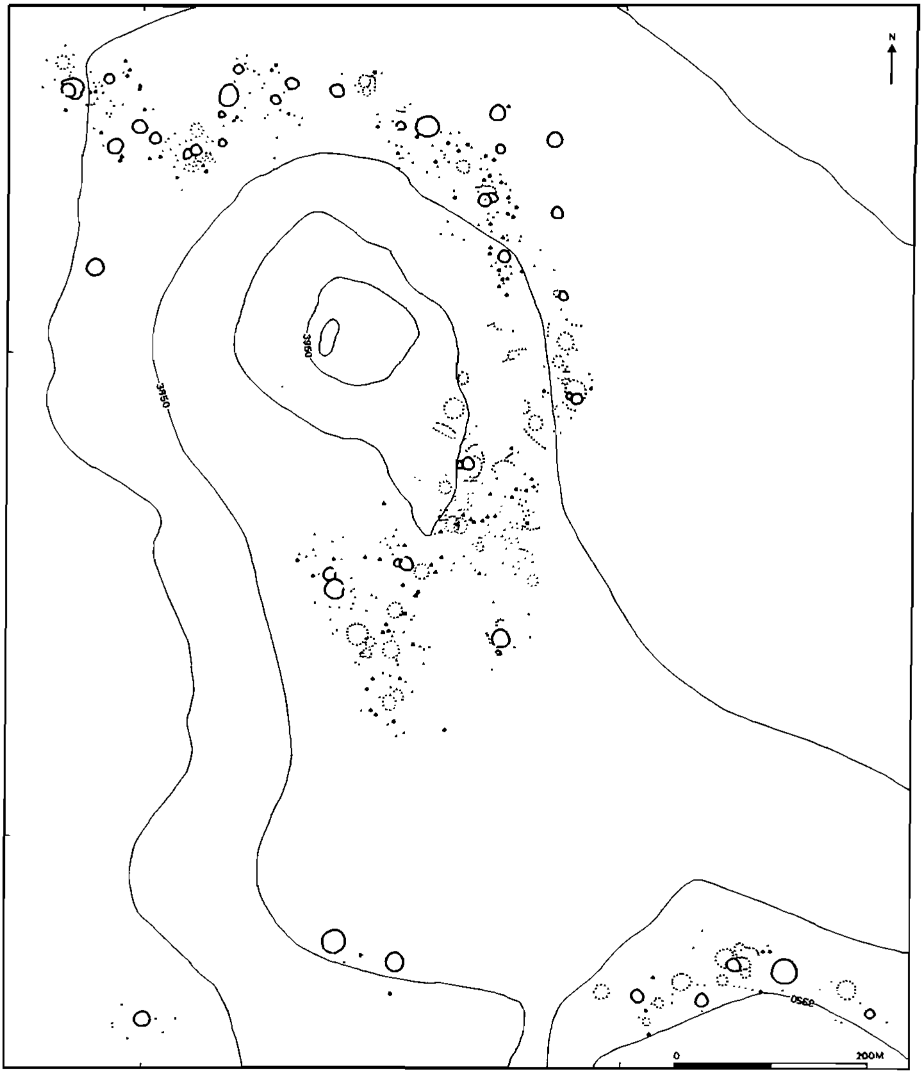

Fig. 13. Settlement closely focused on the north- and east-facing lower slopes of hills.

show a pattern concordant with the dispersed Nguni pattern of the ethnography, yet we have every reason to believe that there is a broad cultural and chronological unity within the sample as a whole. General ecological considerations can hardly be the reason for the variation observed within such a small area. A variety of other factors may be involved and the stereotypes of settlement pattern may be less useful than has been accepted previously.

Clustering by descent group. Preston-Whyte & Sibisi (1975) have shown how the formation of homestead clusters is based on common descent in one rural area of Natal:

> 'As patrilineal and patrilocal people the Nyuswa, . . . soon developed localized segmentary agnatic clusters.' (*op. cit.* 287)

Among the Cape Nguni, Hammond-Tooke (1984) describes agnatic clusters as neighbourhoods having a predominance of one family with a few outsiders. Ethnoarchaeological research by one of us (D. O.) has found similar clustering in three separate areas of Natal-KwaZulu. We are therefore confident that this settlement pattern is of some considerable time depth among Nguni-speaking communities.

Descent-group clustering is of course a widespread feature of settlement patterns in southern Africa as well as further afield. In some cases, such as the Tswana wards (Schapera 1935), descent-group clusters are clearly apparent by the form of their ground plans. Among Nguni-speakers, however, such clusters are evidently less obvious as a spatial pattern—a point that seems to apply to the present sample as well. On some of the maps small clusters containing from three to six or more homesteads with their primary enclosures do seem to be visible within the overall distribution. Examples of this are the western part of Fig. 11 and the clusters in Fig. 14. However, in other areas, for example the eastern part of Fig. 11 and most of Fig. 13 such smaller clusters are not apparent in the general spread of settlement. On the other hand the nearest-neighbour distances, with an overall mean of only 54 m, do indicate that most homesteads had at least one close neighbour. On ethnographic evidence such neighbours are likely to have belonged to the same descent group.

Segmentation of descent groups. The ethnography suggests that the developments of the descent-group cluster through time could well have left its mark in the archaeological record. For the Nyuswa-Zulu, Preston-Whyte & Sibisi (1975:287) describe the process as follows:

> 'The expected pattern was (and is today, where land permits) for sons and brothers, on segmentation of a patriarchal unit, to build their homestead in the fields originally allocated to and cultivated by their wives, surrounding and adjoining as closely as possible the site of the original homestead.'

In archaeological terms we could expect an older homestead with a group of later ones around it. In view of the prevalence of stone robbing in the archaeological settlements we could predict clusters of unrobbed (and therefore contemporary) homesteads arranged around an earlier, robbed homestead. Within the Thukela sample a few such clusters may be present, for example in the western part of Fig. 11. However, it is clear that in some sections more than one robbing process has taken place and therefore there have been at least three phases of rebuilding (Maggs 1982), which makes such interpretation difficult if not impossible. What is clear is that all of the more concentrated settlements have gone through more than one phase of building. At present we are unable to say whether these phases were the result of continuous occupation by the same descent group or reoccupation by different descent groups after an interval of abandonment.

Hierarchy. Within the context of an agro-pastoral economy and a pre-Mfecane, Nguni-speaking society we would not expect to find traces of settlement hierarchy based on such factors as specialised production or markets. Any visible

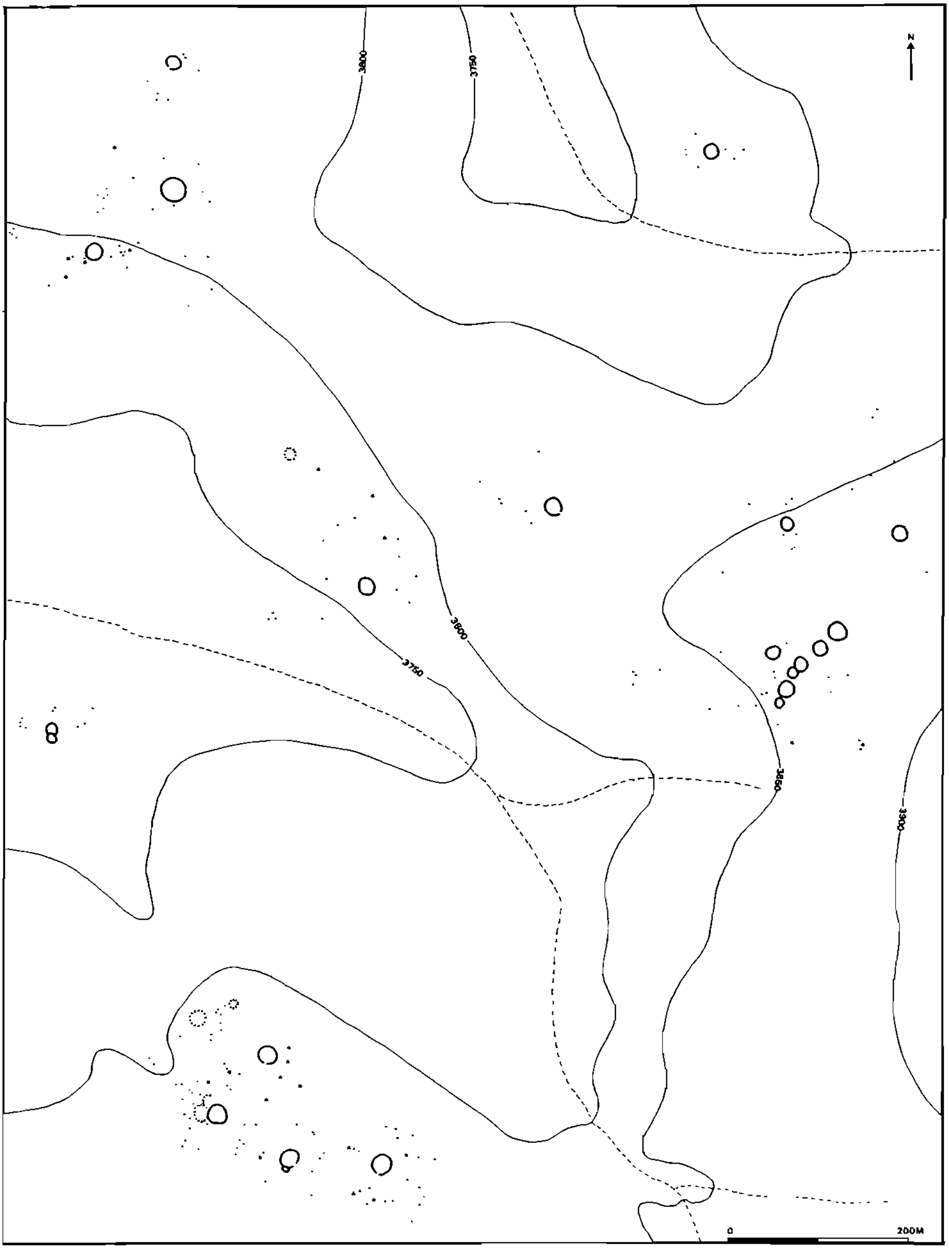

Fig. 14. Dispersed settlement with some weak clusters.

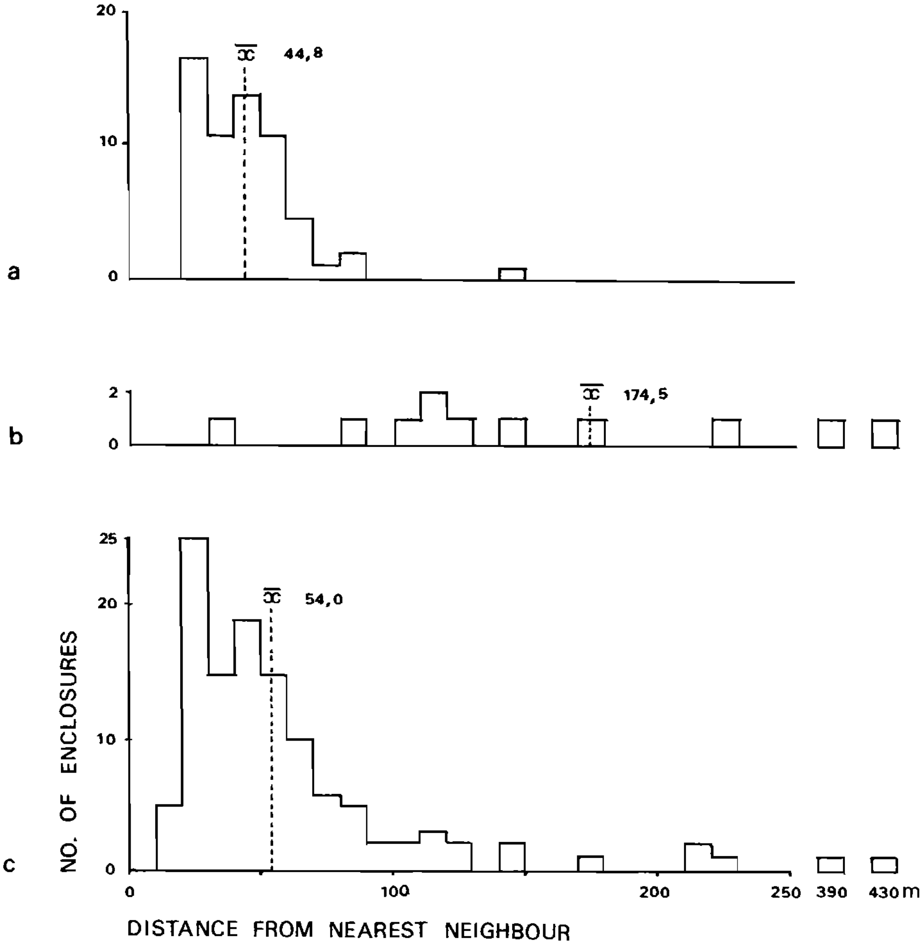

Fig. 15. Histograms showing nearest-neighbour distances between homesteads as measured from centres of primary enclosures. (a) Fig. 11; (b) Fig. 14; (c) Figs 11–14.

differentiation is likely to have resulted from the power and wealth of Kings/Chiefs, particularly in the form of cattle. In view of the *lobolo* system of marriage exchange, chiefly-wealth can be expected to have been associated with larger family units than among commoners. In archaeological terms this differentiation might be expressed in terms of particularly large stock-pens and homesteads with large numbers of hut floors and other features.

As mentioned above, there are no particularly large stock-pens in the sample. The largest ones, between 20 and 25 m in diameter, are appreciably bigger than the majority but not such as to suggest any real difference in status. Furthermore they seem to be fairly randomly scattered through the area both in the larger clusters and in the more dispersed settlements (Figs 11–14). The passage entrances to a few stock-pens may have had a social significance, but in other respects the homesteads in which they occur do not seem to be differentiated from the rest.

The largest homesteads are those with a row of primary enclosures at their centre (Fig. 6), particularly the one with nine enclosures and a clear surrounding ellipse of smaller features. However there are only two examples with more than three enclosures within the sample, one of which has an isolated location towards the south (Fig. 14). Furthermore air photographs from neighbouring areas show that some clusters include several of these linear homesteads. Present evidence therefore suggests that they are not a reflection of hierarchical status.

SETTLEMENT AND THE LANDSCAPE

The present evidence does not indicate to what extent ecology may have influenced the local settlement pattern. The effects of specific environmental parameters including topography and geology are discussed below. At this stage, however, we can make broad statements about ecological factors that may have influenced spatial patterning.

One factor that could have influenced the concentration of settlement in the northern sections of the sample is the proximity of the Thukela River which is the only large water body in the area. However, there are several smaller streams which would have provided enough water for domestic use on a perennial or near-perennial basis. Furthermore excavations at Mgoduyanuka (Maggs 1982) showed that the riverine fauna played a negligible part in the diet. It therefore does not appear the Thukela was an important factor in settlement location.

A botanical examination of the area by C. Liegme (pers. comm.) showed that two main factors influenced the quality of the grazing—direction of slope and geology. The northerly slopes and the soils derived from dolerite rather than sedimentary rocks carried the better quality grazing. Since dolerite outcrops over 37 % of the sample area and since the predominant direction of slope is northerly, the quality of grazing may well have contributed to the relatively dense settlement in the area as a whole, when compared with neighbouring areas.

By local standards the farm Kiaora is rather exceptional in providing relatively sweet grazing compared with most of its neighbours. The present owner, Mr T. Wood told us that cattle, other than highly bred exotic breeds, have no difficulty in going through the winter without supplementary feeding. The good winter grazing could have supported relatively large herds, especially if this was linked to a transhumance system including adjacent, higher altitude areas which have good spring and summer grazing. It is therefore probable that the good grazing contributed to the relative density of Iron Age settlement in the area as a whole. However, the archaeological record is unlikely to indicate whether and how this may have affected the distribution of individual homesteads and clusters.

As in the case of grazing it is not possible to establish the extent of arable land used by the inhabitants of particular settlements within the sample. The main areas cultivated today are to the east, but this was not necessarily the case in pre-colonial times. These areas of lower relief, mainly based on sedimentary rocks with their deeper soils, tend to be the most suitable for modern cultivation. The dolerite-derived soils are less acid than those derived from sediments, but they tend to be more stony, on steeper slopes and in smaller pockets. These could have been suitable for the hoe cultivation of the Iron Age, and indeed there are some indications that this was the case. In some sections, notably in parts of Fig. 12, groups of stone piles, which have no apparent connection with the homestead structures as discussed above, occur on rather stony dolerite soil. As the soil around these mounds has never been ploughed, they probably reflect field clearing during hoe agriculture. Since dolerite outcrops dominate the northern half of the sample area, patches of dolerite-derived soils may have influenced the concentration of settlement here.

Topography. Two topographical factors seem to have influenced the choice of homestead locations—steepness of slope and altitude—while a third, aspect of slope, has had little if any effect.

The angle of slope was measured in a line cutting through the centre of each primary enclosure, but from points sufficiently beyond the walls to avoid their influence on the hill slope. The results (Fig. 16) indicate an avoidance of flat land and a preference for moderate slopes mainly between two and five degrees. Drainage was probably a major concern in this preference, while steeper slopes

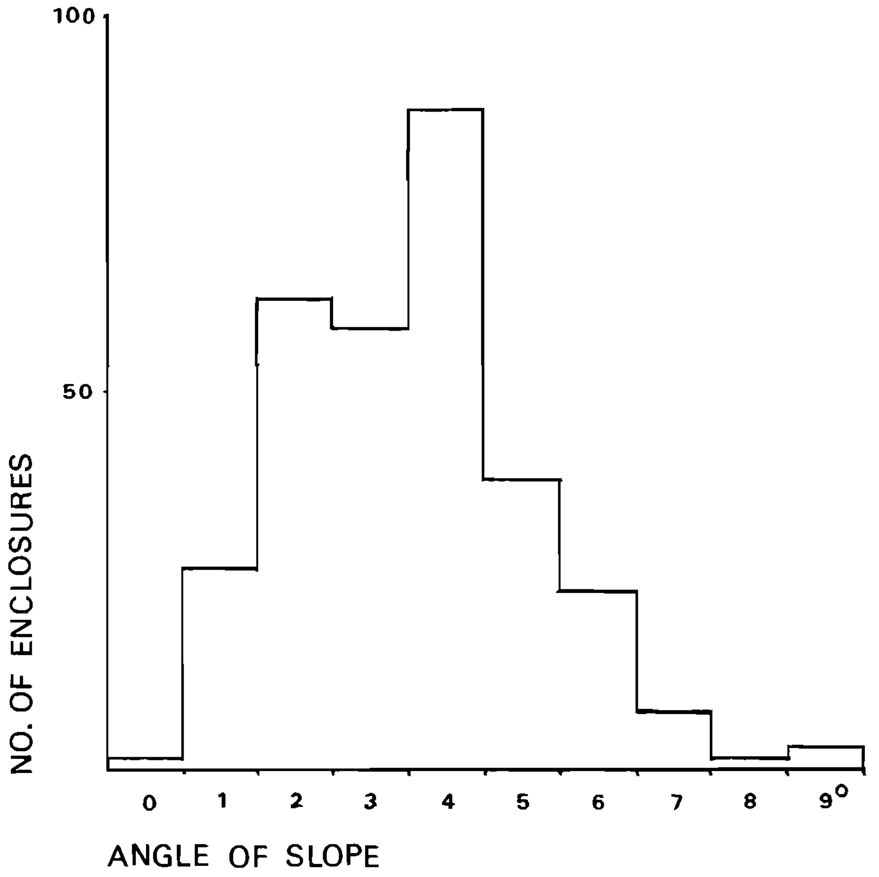

Fig. 16. Histogram showing the angle of slope at each homestead. Moderate slopes were preferred over level ground or steeper slopes.

would have been uncomfortable since no attempt appears to have been made to level off homestead sites or even hut floors.

Therefore, while the angle of slope was important in site selection, the aspect of the slope seems to have been of little or no significance. Any aspect was acceptable (Fig. 17), and although there are rather more examples in the north-east and the south-west quadrants, this does not indicate a noticeable preference.

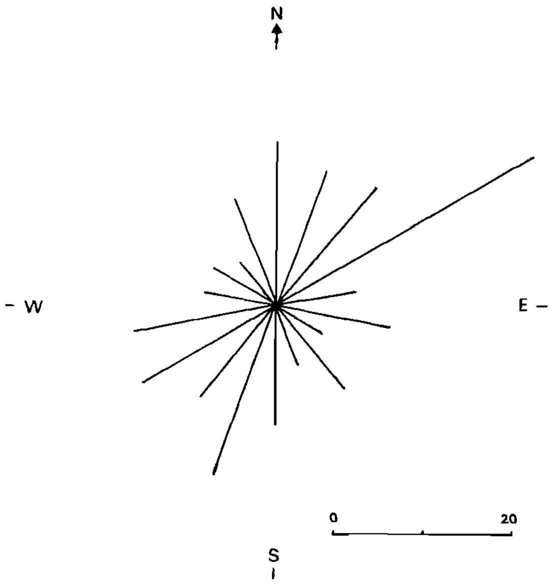

Fig. 17. Aspect of slope for each homestead within the sample area.

As with hill-slope, altitude has influenced the choice of homestead sites. Figure 18 shows the density of settlement per square kilometer in each altitude zone of the research area (N.B. the available topographic map shows altitude in imperial units). The figure shows that both the low-lying and highest parts of the research area were avoided for building.

Geology. Geologically the sample can be divided into two broad categories: sandstones and shales of the Karoo Supergroup that comprise 63 % of the area, and intrusive igneous 'dolerite' that makes up the remainder. The dolerite, being more resistant to weathering, has largely determined relief in the local landscape.

For our purposes, however, the dolerite outcrops are most important because they are the source of building stone. Virtually all the stone used in building consists of weathered pieces of dolerite. Most of the labour expended in building the typical loosely-piled walls would go to the transport of stone, therefore distance from the source would be a consideration.

In order to establish how significant this consideration may have been, the position of each primary enclosure was determined in relation to the nearest dolerite outcrop. Figure 19 shows very clearly that most stone walls were on dolerite and that none was more than 200 m from an outcrop. Since only 74 % of

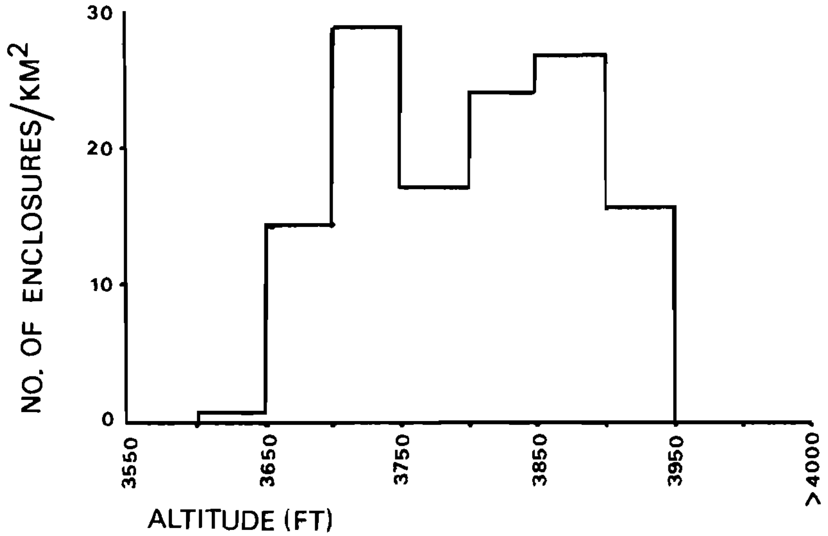

Fig. 18. Histogram showing the number of homesteads per km^2 for each altitude zone within the area. The two highest and lowest zones were avoided.

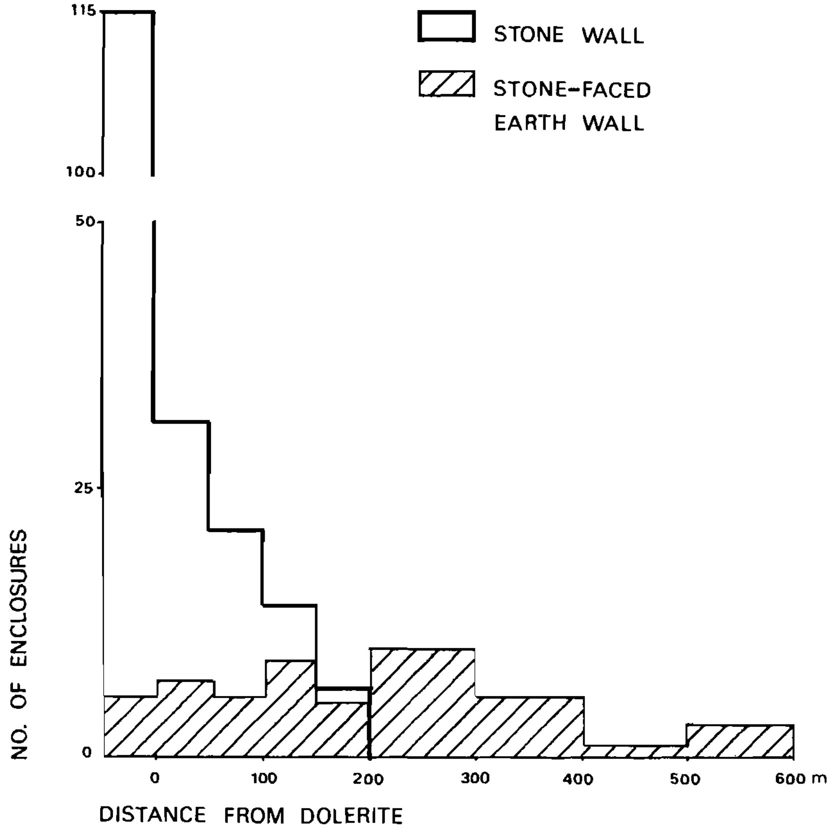

Fig. 19. Histograms show distance between primary enclosures and the nearest dolerite outcrop.

the sample falls on or within 200 m of dolerite, a quarter of the area has no enclosures with solid stone walls.

The distance from dolerite also provides an explanation for another aspect of local Iron Age building, namely the earth walls faced with stone. This kind of walling has not been reported from southern Africa except in the interior grasslands of Natal-KwaZulu. Within the sample, these structures are much less closely tied to the dolerite outcrops than are the solid stone walls (Fig. 19). In fact their modal distance is just beyond the range of the stone walls. Clearly this method of construction is an adaptation to avoid the high labour input needed to carry stones over a distance greater than 150 m.

CONCLUSIONS

Site location was clearly influenced by a number of environmental factors, the most important of which was the presence of dolerite stones suitable for building. The dolerite areas are not uniformly endowed with this building material; in some the natural jointing has produced pieces too large to be useful, while in others the rock is covered by soil. On the other hand there are places with plenty of usable stones but no building.

Other factors that were evidently important in the choice of locations include a moderately sloping but not too level site, and the avoidance of the lowest and highest altitude situations in the area. However, the aspect of the site seems to have been of little or no concern.

This study has confirmed the expectation that homesteads would have been orientated according to the slope of the ground. The two parameters—orientation of homesteads (Fig. 7) and aspect of slope for each homestead site (Fig. 17)—are therefore linked, as is confirmed by the similar patterning shown in Figs 7 and 17. If the easterly preference, proposed by Krige (1936) and Kuper (1980) for Zulu homesteads, applied to this sample, we could expect an easterly predominance to be visible in Figs 7 and 17, which is not the case. The absence of such predominance for this sample, together with similar results from current ethnoarchaeological research (Mack & Oswald in press), suggests that this easterly preference among the Zulu may be a myth of the anthropologist's making. There may perhaps be an underlying 'ideal' for homestead orientation which, because of the need for compromise between competing factors in the choice of building sites, has become blurred or lost in the samples examined. Such a possibility cannot, however, be given serious consideration in the absence of any real support in the ethnographic record (Mack & Oswald in press).

The contrast between the large northern clusters and the dispersed homesteads of the southwest provides further evidence on site location. The extensive dolerite areas to the north would have provided sweeter pasturage and better agricultural land, at least in pockets. This may partly explain the greater density of settlement compared with the southwest with its sedimentary derived soils. Homesteads here are not only rarer and more scattered but away from the dolerite, they have stone-faced earth walls unlike the predominantly stone walls of the north.

More work over a large sample will be needed to examine the contrast between the solid stone and the stone-faced earth structures. There may be additional factors other than distance from dolerite outcrops that have influenced this variation. For example it is not clear whether the latter type is generally more dispersed in settlement pattern, as it is in the south-western section of the sample. The homesteads with a row of primary enclosures present another unresolved problem. Within the sample they all have stone-faced earth walls but, as they are rare here, other areas will have to be examined to find out whether this is generally the case.

While environmental and perhaps some ecological factors have affected the pattern of settlement within the sample, these alone do not explain all the observed patterning. Certain aspects such as clustering within the larger settlements were almost certainly controlled by social factors. Although the evidence is as yet weak, the suggestion of descent groups through time and the resultant formation of agnatic clusters was probably an underlying cause of the patterning observed, for example in Fig. 11. The difference between the large homesteads with rows of stock-pens and those with only one must reflect some divergence from the normal residential patterning within kin groups. Ethnoarchaeological research in the region may well provide further insights into the pre-colonial patterning.

While this project is intended primarily as a detailed local study, certain aspects have a bearing on the broader current debates on Iron Age and historical settlement patterns. We have seen that while the south-western section conforms to an expected dispersed 'Nguni' pattern the northern sections resemble more closely Sansom's (1974) western model, characteristic of Sotho-Tswana peoples. Sansom's macro-ecological model cannot provide an explanation for this variation over such a short distance; rather it seems that local environmental factors are the reason.

The majority of the homesteads are of a pattern broadly comparable with those from other Nguni-speaking societies—the central stock-pen with peripheral huts, grain stores and other structures. They do however differ from the historic Zulu pattern in important respects. These include the uphill entrances to stock-pens, the lack of concentration of huts in the uphill sector of the homestead and the relatively scattered nature of the smaller structures—there being no demarcation of the outer limit of the homestead.

Further archaeological and ethnoarchaeological research into the spatial patterning of settlement at a local level is needed before we can embark on detailed comparative studies to trace changes from Iron Age times to today and from one major region of southern Africa to another.

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